

PATENT ABSTRACTS OF JAPAN

(11)Publication number : 2000-353820

(43)Date of publication of application : 19.12.2000

(51)Int.Cl.

H01L 33/00
H01S 5/183
H01S 5/323

(21)Application number : 11-166352

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(22)Date of filing : 14.06.1999

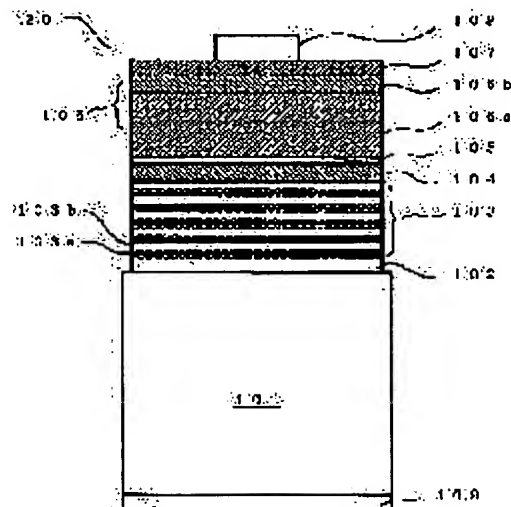
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(54) AlGaInP LIGHT EMITTING ELEMENT WITH WINDOW LAYER

(57)Abstract:

PROBLEM TO BE SOLVED: To acquire an AlGaInP light emitting element of high brightness by providing a specified p-type clad layer, a light emitting layer and an n-type clad layer in a GaAs single crystalline substrate and providing a window layer consisting of zinc oxide thereon.

SOLUTION: P-type clad layers 104, 106 consisting of $(\text{Al}_x\text{Ga}_{1-x})\text{In}_{1-x}\text{P}$ ($0 \leq x \leq 1$, $0 < x < 1$), a light emitting layer 105, an n-type clad layer and a window layer 107 of a polycrystalline zinc oxide are formed on a GaAs single crystalline substrate 101. In the process, the composition ratio $(1-X)$ of indium of an AlGaInP layer is made 0.5, thereby obtaining good lattice-match to a GaAs substrate 101. It is desirable that zinc oxide is hexagonal wurtzite type crystal, a polycrystalline zinc oxide film is preferably orientated C-axially and the resistivity is made $1 \times 10^3 \Omega \cdot \text{cm}$ or less. Although zinc oxide crystal shows n-type conduction in its so-called undoped state wherein impurities are not added intentionally, an n-type zinc oxide window layer 107 of lower resistivity can be formed by doping a group III element.



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[Date of final disposal for application]

[Patent number]

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[Date of requesting appeal against examiner's decision of rejection]

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